

Pres #1 Title: DIAGNOSING THE NATURE OF LAND-ATMOSPHERE COUPLING DURING THE

2006-7 DRY/WET EXTREMES IN THE U. S. SOUTHERN GREAT PLAINS

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Pres #1 Text:

The degree of coupling between the land surface and PBL in NWP models remains largely undiagnosed due to the complex interactions and feedbacks present across a range of scales. In this study, a framework for diagnosing local land-atmosphere coupling (LoCo) is presented using a coupled mesoscale model with observations during the summers of 2006/7 in the U.S. Southern Great Plains. Specifically, the Weather Research and Forecasting (WRF) model has been coupled to NASA's Land Information System (LIS), which enables a suite of PBL and land surface model (LSM) options along provides a flexible and high-resolution representation and initialization of land surface physics and states. This coupling is one component of a larger project to develop a NASA-Unified WRF (NU-WRF) system. A range of diagnostics exploring the feedbacks between soil moisture and precipitation are examined for the dry/wet extremes, along with the sensitivity of PBL-LSM coupling to perturbations in soil moisture.